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FLOOD INSURANCE STUDY

ORIGINAL

VILLAGE OF MOUNT KISCO, NEW YORK
WESTCHESTER COUNTY

SEPTEMBER 18, 1986

Federal Emergency Management Agency

COMMUNITY NUMBER - 360918

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TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
1.1 Purpose of Study	1
1.2 Authority and Acknowledgements	1
1.3 Coordination	1
2.0 AREA STUDIED	2
2.1 Scope of Study	2
2.2 Community Description	4
2.3 Principal Flood Problems	4
2.4 Flood Protection Measures	4
3.0 ENGINEERING METHODS	5
3.1 Hydrologic Analysis	5
3.2 Hydraulic Analyses	6
4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS	8
4.1 Flood Boundaries	8
4.2 Floodways	8
5.0 INSURANCE APPLICATION	9
5.1 Reach Determinations	9
5.2 Flood Hazard Factors	13
5.3 Flood Insurance Zones	15
5.4 Flood Insurance Rate Map Description	16

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TABLE OF CONTENTS - CONTINUED

6.0 OTHER STUDIES.....16

7.0 LOCATION OF DATA.....17

8.0 BIBLIOGRAPHY AND REFERENCES.....17

FIGURES

Figure 1 - Vicinity Map.....3

Figure 2 - Floodway Schematic.....13

TABLES

Table 1 - Summary of Discharges.....6

Table 2 - Floodway Data.....10-12

Table 3 - Flood Insurance Zone Data.....14

EXHIBITS

Exhibit 1 - Flood Profiles

Kisco River.....Panel 01P-05P

Kisco River Tributary 1.....Panel 06P

Branch Brook.....Panel 07P-08P

Exhibit 2 - Flood Boundary and Floodway Map Index

Flood Bounndary and Floodway Map

PUBLISHED SEPARATELY:

Flood Insurance Rate Map Index

Flood Insurance Rate Map

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FLOOD INSURANCE STUDY
VILLAGE OF MOUNT KISCO, NEW YORK

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the Village of Mount Kisco, Westchester County, New York, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study will be used to convert Mount Kisco to the regular program of flood insurance by the Federal Emergency Management Agency (FEMA). Local and regional planners will use this study in their efforts to promote sound flood plain management.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these Federally-supported studies are based. These criteria take precedence over the minimum Federal criteria for purposes of regulating development in the flood plain, as set forth in the Code of Federal Regulations at 44 CFR, 60.3. In such cases, however, it shall be understood that the state (or other jurisdictional agency) shall be able to explain these requirements and criteria.

1.2 Authority and Acknowledgements

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by Andrews & Clark, Inc., for FEMA, under Contract No. H-6810. This work was completed in April 1983.

1.3 Coordination

An initial Consultation and Coordination Officer's (CCO) meeting was held on May 29, 1979 and was attended by Village of Mount Kisco officials, representatives of FEMA and the study contractor. The purpose of this meeting was to explain Flood Insurance Study procedures and to determine study limits.

A meeting was held on October 28, 1980 and between village officials and Andrews & Clark, Inc., (the study contractor) to review study limits established at the May 29, 1979 meeting and to obtain community input useful in the completion of the study.

Preliminary flood boundary delineation were presented by the study contractor for comment at a meeting held on April 6, 1983. This meeting was attended by representatives of the New York Department of Environmental Conservation and the Village of Mount Kisco.

A search for basic data was made at all levels of government. Requested information included historical records of flooding, stream flow records and other published or unpublished reports detailing flood conditions within the study area. On June 25, 1985, the results of the study were reviewed with representatives of FEMA, the Village of Mount Kisco, the New York Department of Environmental Conservation, and the study contractor.

2.0 AREA STUDIED

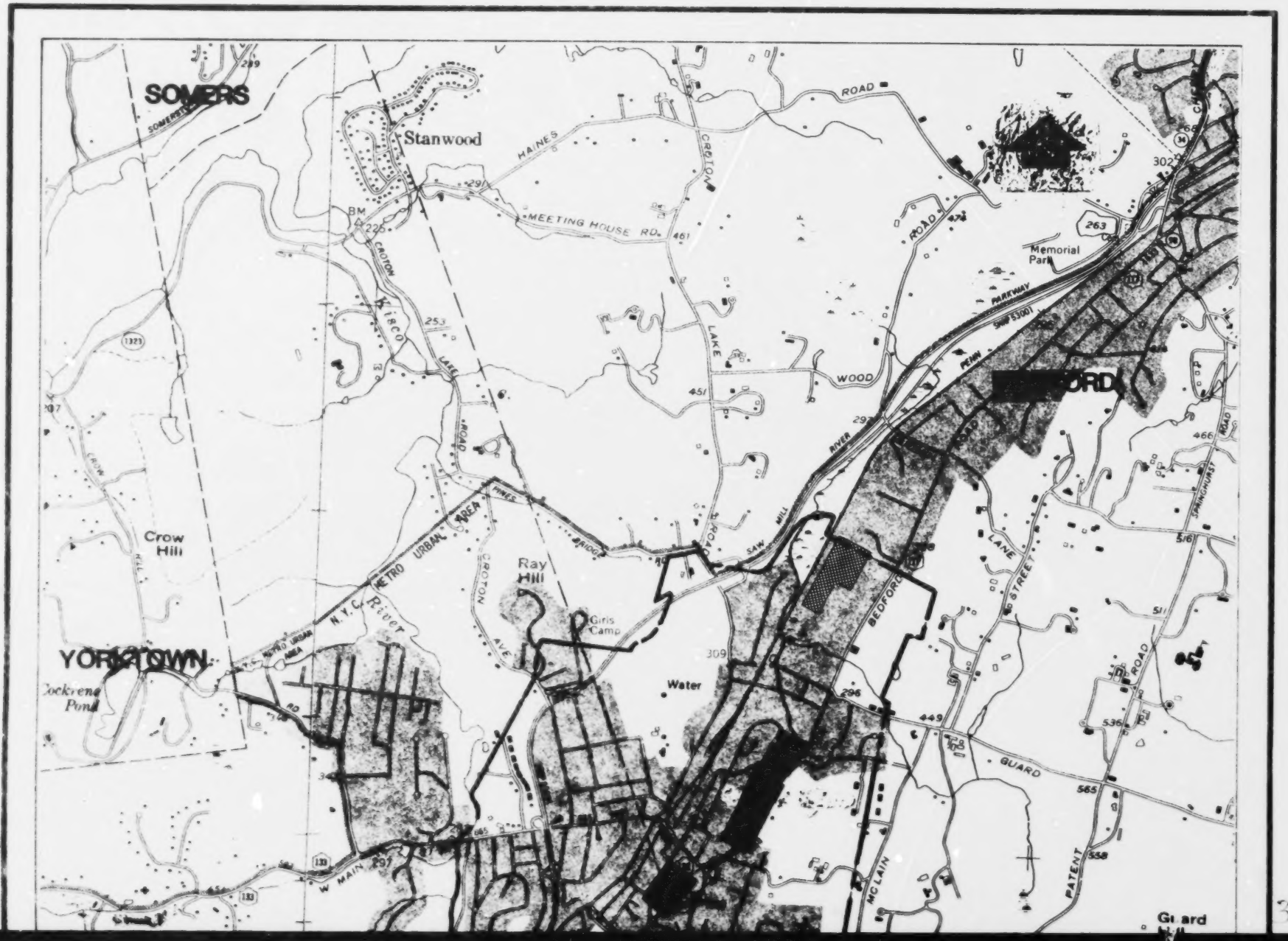
2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Village of Mount Kisco, Westchester County, New York. The area of study is shown on the Vicinity Map (Figure 1).

The limits of study in Mount Kisco were determined by FEMA with community and study contractor consultation at the meeting on May 29, 1979. Floods caused by the overflow of the Kisco River, Kisco River Tributary 1, and Branch Brook within the Mount Kisco corporate limits were studied in detail.

Approximate methods of analyses were used to study those areas having a low development potential or a minimum flood hazard. All areas not designated for study by detailed methods were included in the approximate study. These areas included the Kisco River and unnamed tributaries upstream of the limit of detailed study.

The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas


SOMERS
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ROAD
WOOD
Memorial Park
PARKWAY
RIVER
ROAD
Crow Hill
METRO URBAN AREA
PINES BRIDGE
CROTON
Ray Hill
Girls Camp
N.Y.C. River
YORKTOWN
Water
BEDFORD
LANE
STREET
SPRINGHURST
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GUARD
PATENT
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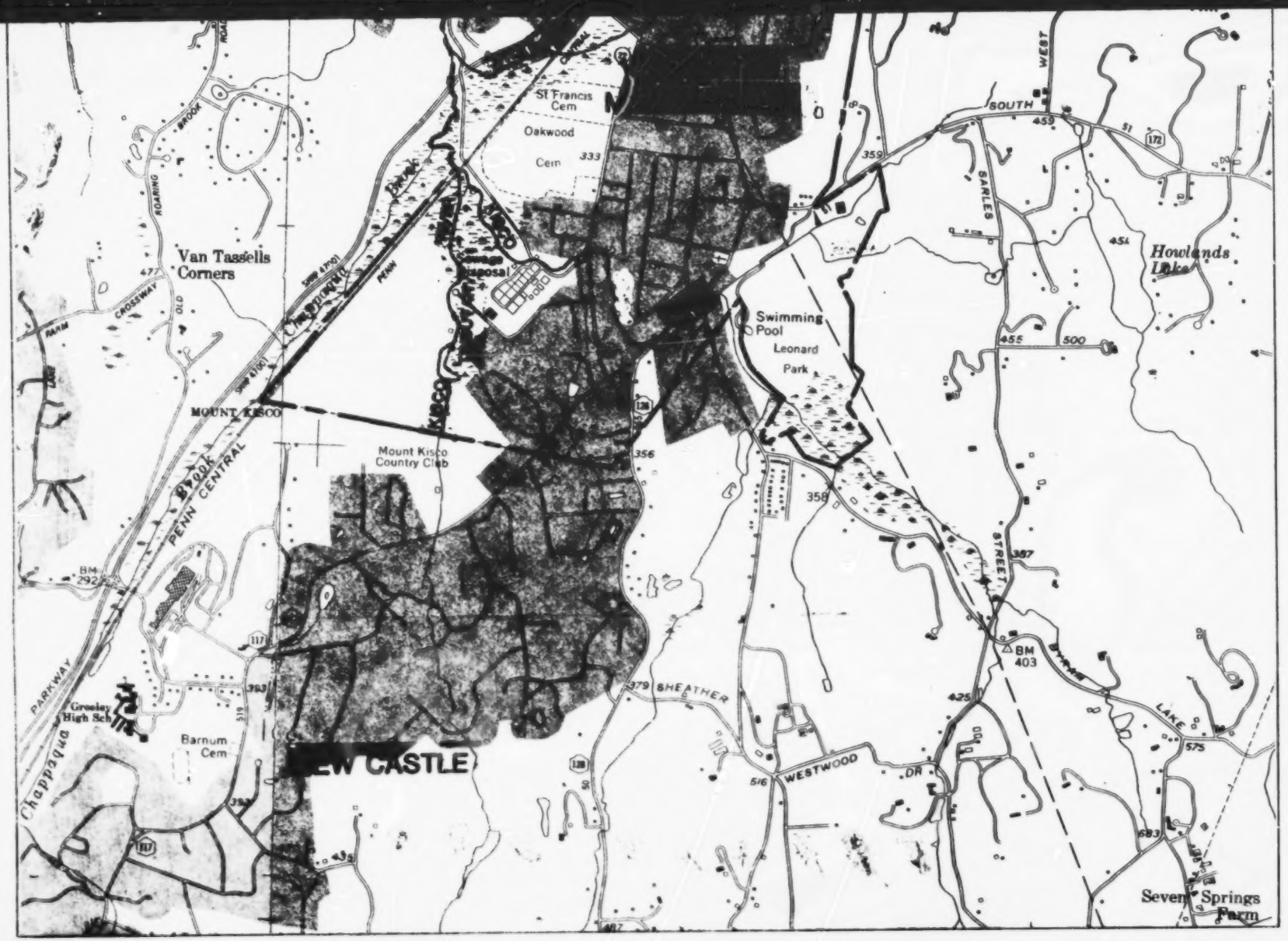

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF MT. KISCO, NY

(WESTCHESTER CO.)

APPROXIMATE SCALE

2000 0 2000 4000 6000 FEET

VICINITY MAP

3A

of projected development or proposed construction for the next five years, through April 1988. The scope and methods of the study were proposed and agreed upon by FEMA and the Village of Mount Kisco.

2.2 Community Description

The Village of Mount Kisco, located in southeastern New York State, is in the central portion of Westchester County. The village is bordered by the Town of Bedford on the north and east and the Town of New Castle on the south and west. Mount Kisco is approximately 32 miles northeast of New York City and 130 miles southeast of Binghamton. Mount Kisco has an area of 3.09 square miles with a population of 8,025, as reported by the 1980 Census (Reference 1). The Westchester County Planning Department has projected a 1985 population of 8,300 for the village (Reference 2).

The climate of the Village of Mount Kisco is one of long summers and short winters. The average annual temperature is approximately 50 degrees Fahrenheit, with extremes varying from 24 degrees below zero to 106 degrees above. The average annual precipitation for the area is approximately 45 inches with observed annual extremes ranging from 29.54 to 68.31 inches. The distribution of precipitation throughout the year is fairly uniform, with slightly higher amounts during the summer months (Reference 3).

2.3 Principal Flood Problems

During meetings with government officials, flooding from Branch Brook, Kisco River, and Kisco River Tributary 1 was cited in the establishment of study limits within the community. No specific problem areas were noted during these contacts.

2.4 Flood Protection Measures

The Village of Mount Kisco does not maintain any structural flood control measures but does provide for the cleaning of drainage structures and culverts on a periodic basis. The village also regulates land use in the flood plain areas.

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3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval), have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (one percent chance of annual occurrence) in any 50 year period is about 40 percent (four in 10), and for any 90 year period, the risk increases to about 60 percent (six in 10). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analysis

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for the flooding sources studied in detail in the Village of Mount Kisco.

Peak discharges for the Kisco River from the downstream corporate limit to the conrail crossing were taken from information prepared for the Town of New Castle Flood Insurance Study (Reference 4). The hydrologic analysis of the Kisco River in New Castle was based on methods developed by the United States Geological Survey (USGS) (Reference 5) and considered watershed characteristics as well as population data for the study area.

Peak discharges for the Kisco River upstream of Conrail, Kisco River Tributary 1 and Branch Brook were determined using a regression analysis prepared in accordance with methods developed by the Federal Highway Administration (FHWA) (Reference 6). The analysis considered the hydrophysiographic characteristics of the study area as well as statistical rainfall information.

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A summary of drainage area-peak discharge relationships developed for the Kisco River, Kisco River Tributary 1, and Branch Brook, is shown in Table 1, "Summary of Discharges."

Table 1 - Summary of Discharges

Flooding Source - Locations	Drainage Area (SQ. MI)	Peak Discharges (cfs) 10-yr	50-yr	100-yr	500-yr
KISCO RIVER					
Confluence with New Croton Reservoir	18.18	1214	1952	2369	3300
Conrail	8.79	761	1297	1524	2256
Confluence of Tributary 200' Southwest of Lexington Avenue	6.28	596	1011	1186	1746
KISCO RIVER TRIBUTARY 1					
Confluence with Kisco River	2.48	337	564	659	958
BRANCH BROOK					
Confluence with Kisco River	2.83	255	422	494	713

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the flooding sources studied in detail in Mount Kisco were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each of the flood sources.

Flood profiles for the Kisco River from the downstream corporate limit to the conrail culvert were based on information prepared for the Town of New Castle Flood Insurance Study (Reference 4). This information was verified by the field reconnaissance to insure accurate representation of currently existing conditions along the water course.

Cross sections used for backwater analysis as well as elevation data and structural geometry for all bridges

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and culverts on Branch Brook were obtained from hydraulic models developed by the U.S. Army Corps of Engineers (COE) for an unpublished study of the stream (Reference 7). The information was verified by field survey performed by the study contractor.

The overbank areas of cross sections for the backwater analyses of the Kisco River upstream of the conrail culvert and Kisco River Tributary 1 were obtained from aerial photographs flown in December 1980 at a scale of 1:9600 (Reference 8). The channel sections were based on field survey data. All bridges and culverts were field surveyed to obtain elevation data and structural geometry.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2).

Channel roughness factors (Manning's "n") used in the hydraulic computations, were chosen by engineering judgement and based on field observations of stream and flood plain areas. Roughness values for the main channel of the Kisco River range from 0.035 to 0.045, with flood plain roughness values ranging from 0.085 to 0.10 for all floods. Roughness values for the main channel of Kisco River Tributary 1 range from 0.04 to 0.045 with flood plain values ranging from 0.09 to 1.10 for all floods. Roughness values for Branch Brook were based on information used in the COE model (Reference 7). This information was verified by field reconnaissance.

Water-surface elevations of floods of the selected recurrence intervals were computed using the U.S. Army Corps of Engineers (COE) HEC-2 step-backwater computer program (Reference 9). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations for the Kisco River upstream of the conrail culvert were based on flood profiles prepared for the Town of New Castle Flood Insurance Study (Reference 4). Starting water-surface elevations for Kisco River Tributary 1 and Branch Brook were calculated using the slope-area method. All elevations are referenced from the National Geodetic Vertical Datum of 1929, (NGVS) formerly referred to as Sea Level Datum of 1929. Elevation reference marks used in this study are shown on the maps.

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4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by FEMA as a base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For the streams studied in detail, the boundaries of the 100- and the 500-year floods have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:4800 with a contour interval of 4 feet (Reference 10). In cases where the 100- and the 500-year flood boundaries are close together or collinear only the 100-year boundary has been shown.

The boundaries of the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map (Exhibit 2). Small areas within the flood boundaries may lie above the flood elevations, and therefore, may not be subject to flooding. Owing to limitations of the map scale and/or lack of detailed topographic data, such areas are not shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of the floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100-year flood may

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be carried without substantial increases in flood heights. Minimum standards of FEMA limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this report are presented to local agencies as minimum standards that can be adopted or that can be used as a basis for additional studies.

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the flood plain. The results of these computations were tabulated at selected cross sections for each stream segment for which a floodway was computed (Table 2).

As shown on the Flood Boundary and Floodway Map, (Exhibit 2), the floodway widths were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the boundaries of the floodway and the 100-year flood are either close together or collinear, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, FEMA has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors (FHFs), and flood insurance zone designations for each significant flooding source affecting the Village of Mount Kisco.

5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	TOTAL WIDTH/ WIDTH WITHIN CORP. LMTS.	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
KISCO RIVER								
A	346	49/21	248	9.6	276.1	276.1	276.7	0.6
B	916	93/73	686	3.5	280.5	280.5	280.5	0.0
C	1936	232/62	1710	1.4	280.9	280.9	281.1	0.2
D	3506	305/145	2163	1.1	282.3	282.3	282.7	0.4
E	5601	152	1403	1.1	282.5	282.5	282.9	0.4
F	6586	222	1764	0.7	282.5	282.5	283.0	0.5
G	8461	270	1045	1.1	287.0	287.0	287.2	0.2
H	9516	167	902	1.3	294.0	294.0	294.0	0.0
I	10656	42	126	9.4	298.2	298.2	298.3	0.1
J	11556	34	195	6.1	325.5	325.5	325.5	0.0
K	12236	37	187	6.3	335.4	335.4	336.3	0.9
L	12526	45	350	3.4	344.2	344.2	344.2	0.0

[1] FEET ABOVE CORPORATE LIMITS

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF MT. KISCO, NY

(WESTCHESTER CO.)

FLOODWAY DATA

10

KISCO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
KISCO RIVER TRIBUTARY 1								
A	1050	135	106	6.2	277.8	277.8	278.1	0.3
B	2185	155	832	0.8	282.8	282.8	283.7	0.9
C	3465	235	978	0.7	284.8	284.8	284.9	0.1

[1] FEET ABOVE CONFLUENCE WITH KISCO RIVER

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF MT. KISCO, NY

(WESTCHESTER CO.)

FLOODWAY DATA

KISCO RIVER TRIBUTARY 1

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FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
BRANCH BROOK								
A	1804	260	1249	0.4	279.5	279.5	280.1	0.6
B	3234	68	337	1.5	282.3	282.3	282.9	0.6
C	3717	59	353	1.4	282.5	282.5	283.2	0.7
D	4980	27	183	2.7	284.6	284.6	285.5	0.9
E	5258	66	419	1.2	286.0	286.0	286.9	0.9
F	6401	102	655	0.8	286.3	286.3	287.2	0.9
G	7278	80	469	1.1	287.2	287.2	288.2	1.0
H	8417	15	105	4.7	288.7	288.7	289.5	0.8
I	9609	210	1589	0.3	292.3	292.3	293.3	1.0
J	11043	112	525	0.9	292.7	292.7	293.7	1.0

[1] FEET ABOVE CONFLUENCE WITH KISCO RIVER

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TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

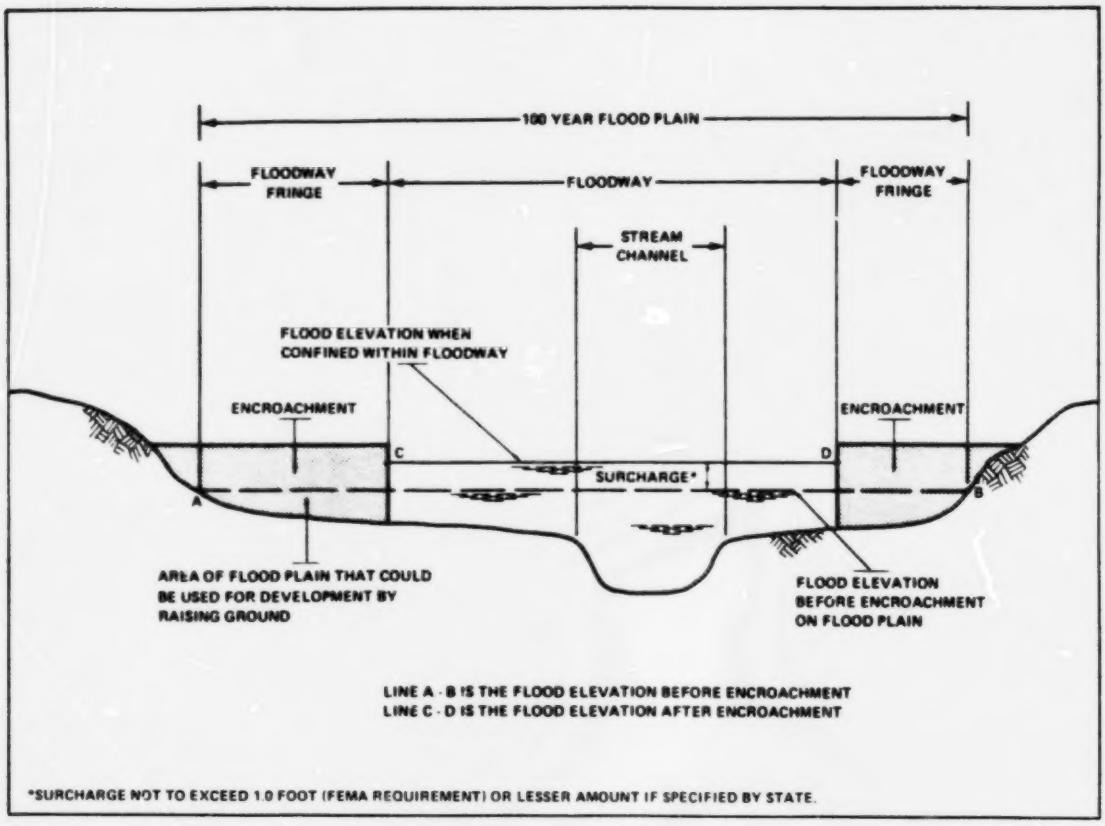
VILLAGE OF MT. KISCO, NY

(WESTCHESTER CO.)

FLOODWAY DATA

12

BRANCH BROOK


100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

FLOODWAY SCHEMATIC Figure 2

Average Difference Between 10- and 100-yr Floods	Variations
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot

The location of the reaches determined for the Village of Mount Kisco are shown on the Flood Profiles (Exhibit 1) and are summarized in the Flood Insurance Zone Data Table (Table 3).

5.2 Flood Hazard Factors (FHFs)

The Flood Hazard Factor is used to correlate flood information with insurance rate tables. Correlations

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FLOODING SOURCE	PANEL [1]	ELEVATION DIFFERENCE [2] BETWEEN 1.0% (100 YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION [3] (NGVD)
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Kisco River							
Reach 1	01,02	-2.0	-0.7	1.1	020	A4	Varies
Reach 2	02	-2.6	-0.9	1.1	025	A5	Varies
Reach 3	02	-1.5	-0.4	1.2	015	A3	Varies
Kisco River Tributary 1							
Reach 1	02	-0.7	-0.2	0.4	005	A1	Varies
Branch Brook							
Reach 1	01,02	-2.0	-0.4	1.1	020	A4	Varies

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO THE NEAREST FOOT - SEE MAP

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TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF MT. KISCO, NY

(WESTCHESTER CO.)

FLOOD INSURANCE ZONE DATA

KISCO RIVER, KISCO RIVER TRIBUTARY 1, BRANCH BROOK

between property damages from floods and their assigned FHFs are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest one-half foot and shown as a three-digit code. For example, if the difference between the water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005 if the difference is 1.4 feet, the FHF is 015, if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year flood water-surface elevations is greater than 10.0 feet, the accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective FHFs, the entire incorporated area of Mount Kisco was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

Zone A:	Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods, no base flood elevations shown of FHF's determined.
Zone A1,A3,A4,A5:	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones assigned according to FHFs.
Zone B:	Areas between the Special Flood Hazard Areas and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot or, areas subject to 100-year flooding from sources with drainage areas of less than one square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding.

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Table 3, "Flood Insurance Zone Data," summarizes the flood elevation differences, FHFs, flood insurance zones, and base flood elevations for the flooding sources studied in detail in the Village of Mount Kisco.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for the Village of Mount Kisco is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by FEMA.

6.0 OTHER STUDIES

The Federal Insurance Administration has published Flood Hazard Boundary Maps for the Village of Mount Kisco (Reference 11). This map contains a delineation of flood limits based on approximate methods and historical records of local flooding. The maps were used to verify flow lines developed for the Kisco River, Kisco River Tributary 1 and Branch Brook in this Flood Insurance Study.

The United States Geological Survey has prepared a map of flood prone areas for the Village of Mount Kisco and surrounding areas (Reference 12). This map was used to verify flood boundaries delineated in this Flood Insurance Study.

The Soil Conservation Service (SCS) has prepared a report entitled Westchester County Soil Survey, Interim Report (Reference 13). This report delineates flood prone areas based on hydrologic soil groups within the Village of Mount Kisco and surrounding areas. Information contained in this report was used to verify flow lines developed for this Flood Insurance Study.

The FEMA has prepared a Flood Insurance Study for the Town of New Castle, New York (Reference 4). The studies include an analysis of flooding on the Kisco River downstream of the Mount Kisco Corporate Limits as well as a common reach of the stream to the conrail culvert. Hydraulic and hydrologic information prepared for the Kisco River in Mount Kisco is in agreement with information contained in the New Castle studies.

The U.S. Army Corps of Engineers (COE) has prepared a hydraulic model for Branch Brook in Mount Kisco (Reference 7) for an unpublished study of the stream. This model was used as the basis of the hydraulic analysis of the stream in this Flood Insurance Study.

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This study is authoritative for the purposes of the Flood Insurance Program, and the data presented here either supersede or are compatible with previous determinations.

7.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, Federal Emergency Management Agency, Regional Director, Region II Office, 26 Federal Plaza, Room 19-100, New York, New York, 10278.

8.0 BIBLIOGRAPHY AND REFERENCES

1. U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Number of Inhabitants, New York, Washington, D.C., 1981.

2. County of Westchester, Department of Planning, Statistical Data, White Plains, New York, 1980.

3. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Climatic Summary of the United States, New York, Silver Spring, Maryland, Revised June 197[illegible].

4. Federal Emergency Management Agency, Flood Insurance Study, Town of New Castle, Westchester County, New York, Washington, D.C., unpublished.

5. U.S. Department of the Interior, Geological Survey, in cooperation with the New Jersey Department of Environmental Protection, Division of Water Resources, Special Report 38, Magnitude and Frequency of Floods in New Jersey with Effects of Urbanization, Washington, D.C., 1974.

6. Federal Highway Administration, Offices of Research and Development, Runoff Estimates for Small Rural Watersheds and Development of a Sound Design Method, Report No. FHWA-RD-77-159, Washington, D.C., October 1977.

7. U.S. Army Corps of Engineers, New York District, Hydraulic Model of Branch Brook, Mount Kisco, New York.

8. Topo-Me[illegible]iics, Inc., Aerial Photography, 1:9600, Central Islip, New York, December 1980.

BEST COPY AVAILABLE

9. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Generalized Computer Program, Davis, California, November 1976.

10. Topo-Metrics, Inc., Topographic Map of Mount Kisco, New York, scale 1:4800, contour interval 4 feet, Central Islip, New York, March 1981.

11. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Village of Mount Kisco, Westchester County, New York, Washington, D.C., December 9, 1977.

12. U.S. Department of the Interior, Geological Survey, Map of Flood Prone Areas, scale 1:2400, contour interval 20 feet, Mount Kisco Quadrangle, Washington, D.C., 1973.

13. U.S. Department of Agriculture, Soil Conservation Service, Westchester County Soil Survey, Interim Report, White Plains, New York, October 1978.

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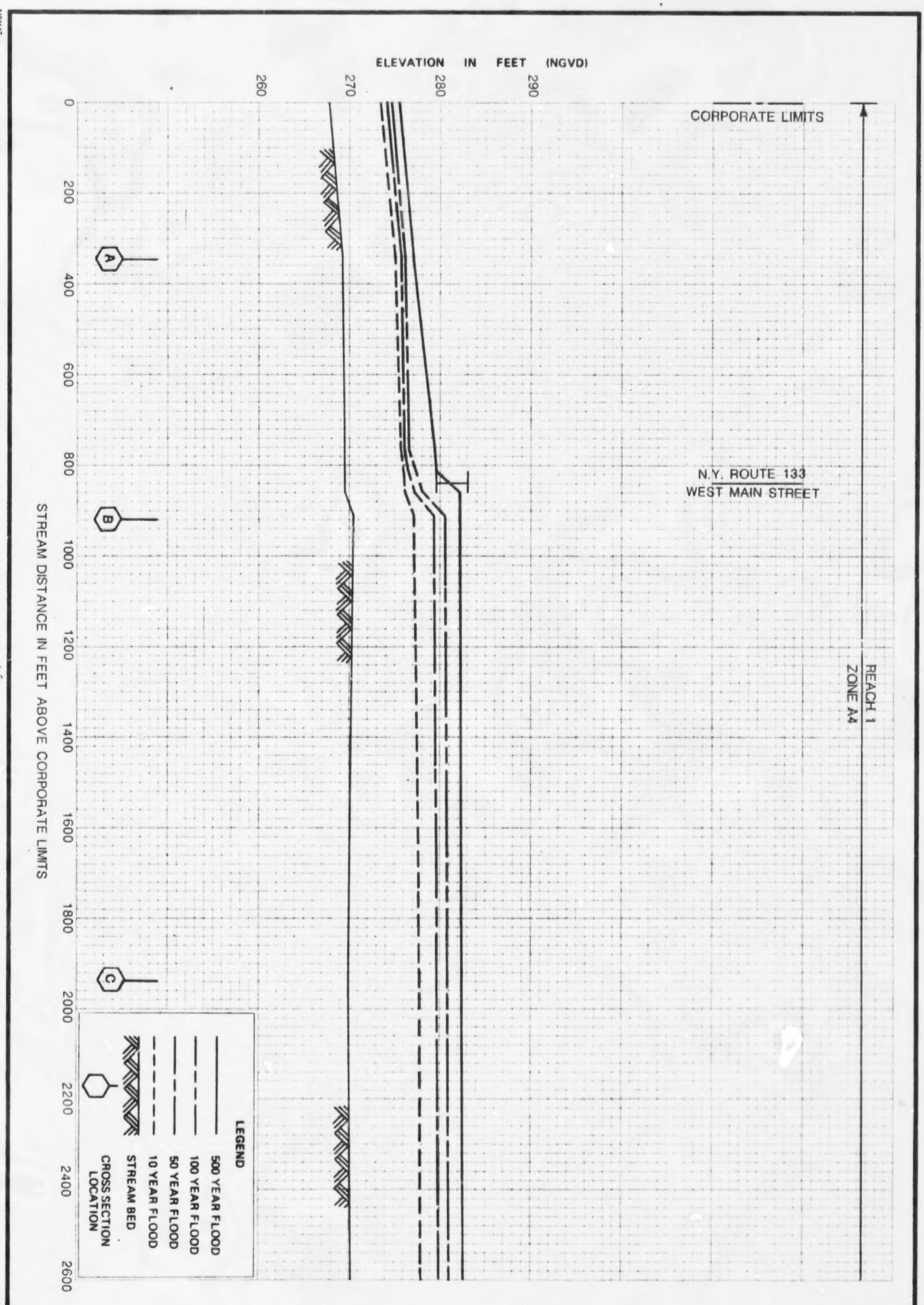

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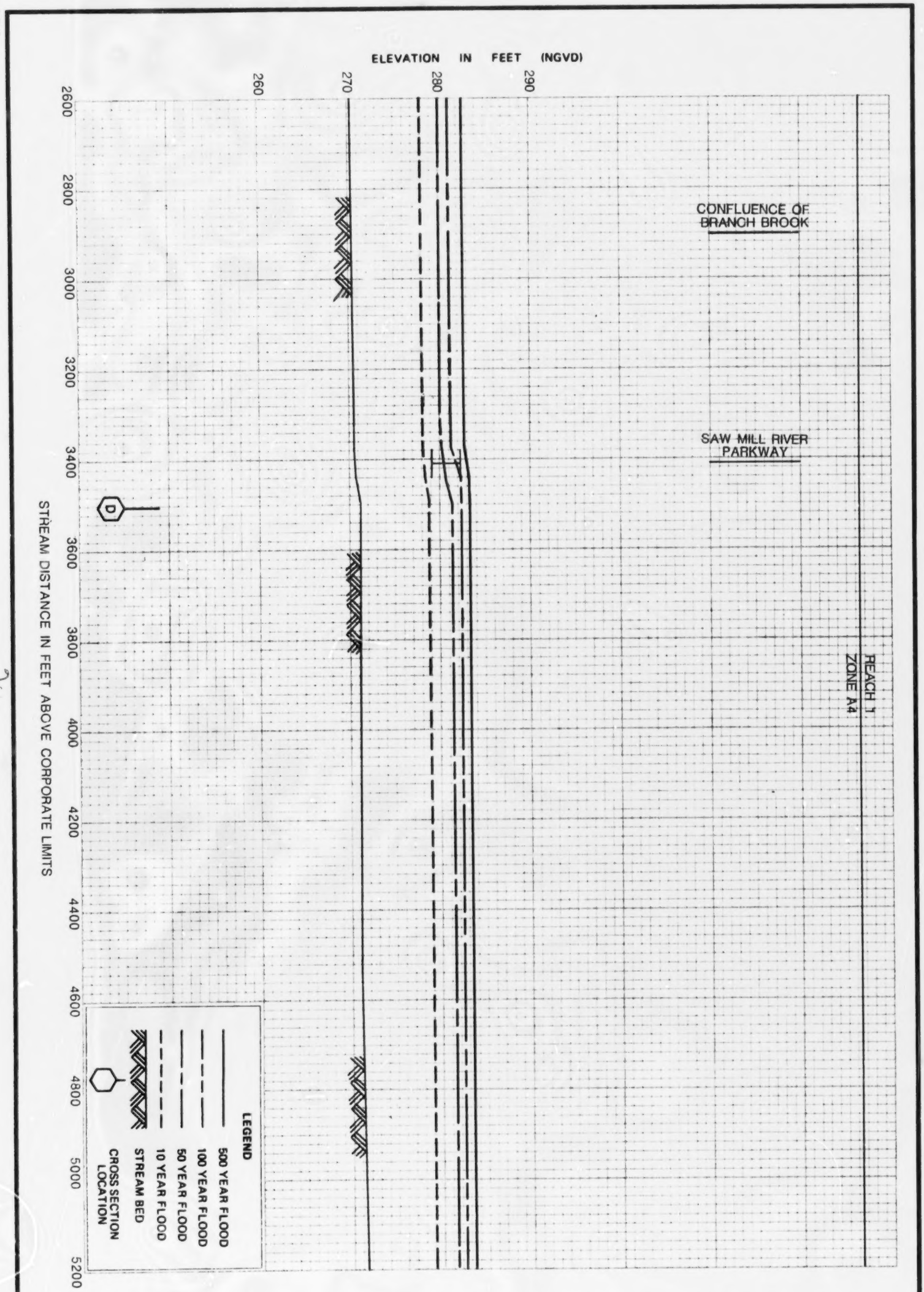

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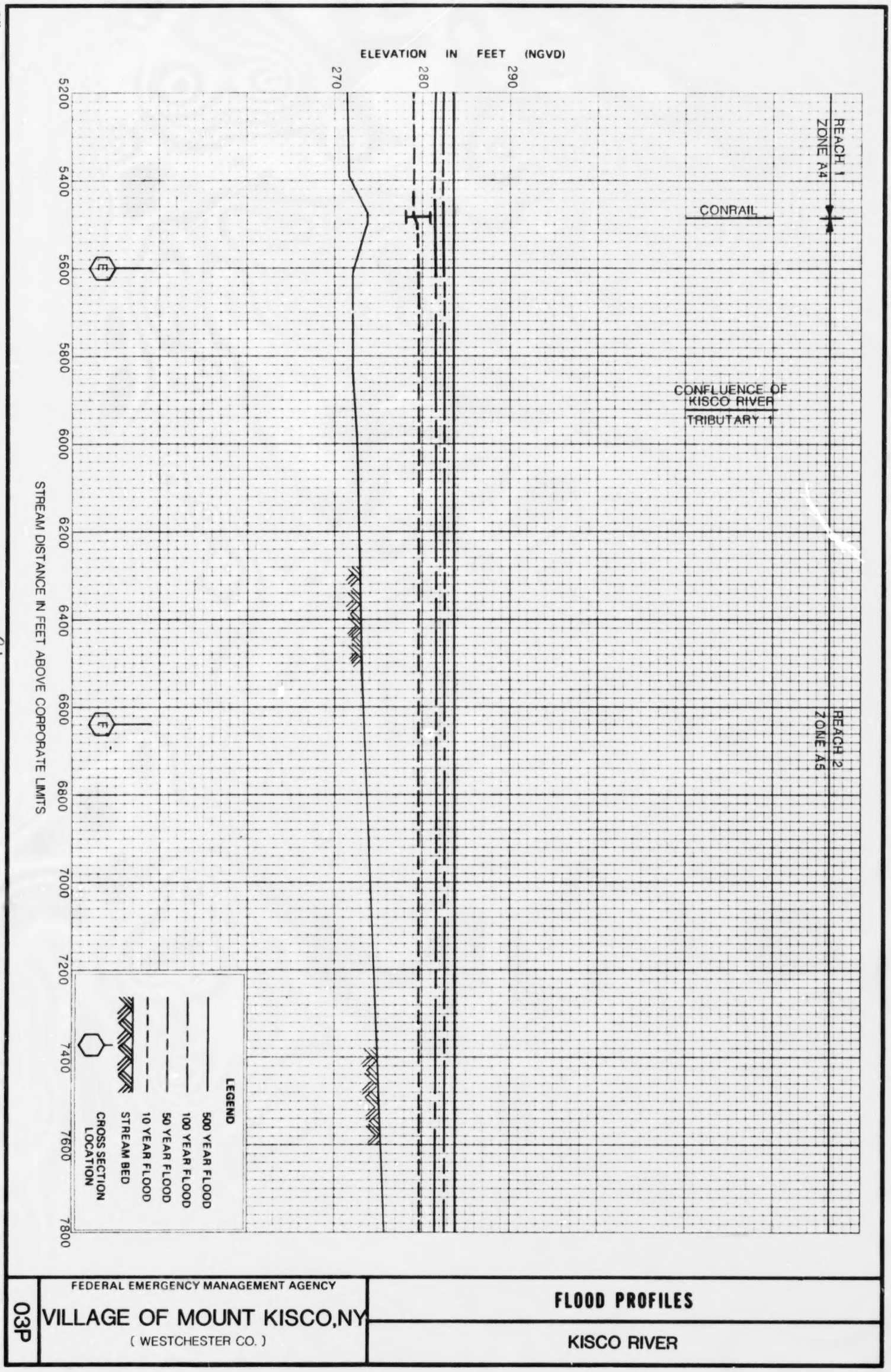


FEDERAL EMERGENCY MANAGEMENT AGENCY

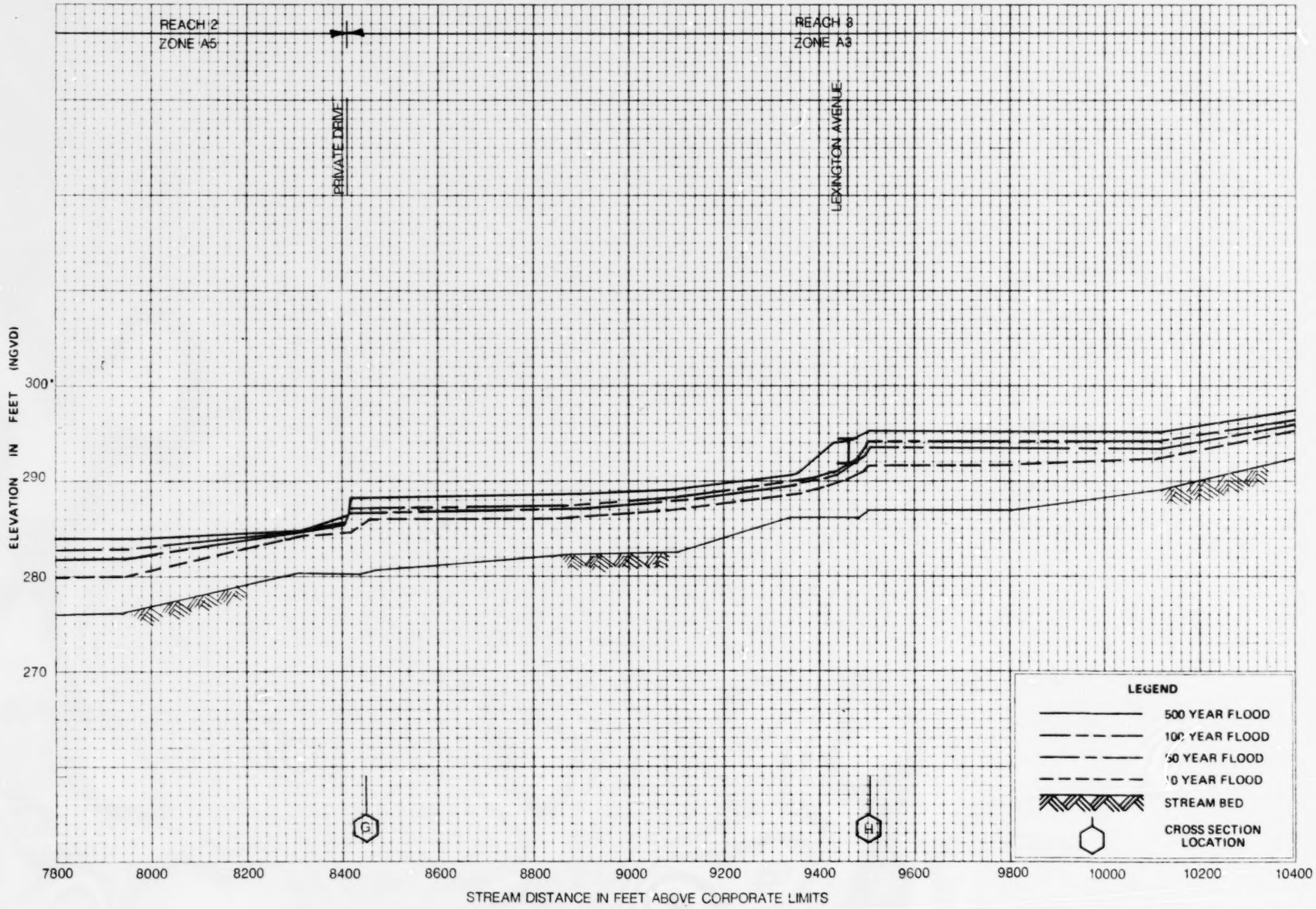
03P

VILLAGE OF MOUNT KISCO, NY

(WESTCHESTER CO.)

FLOOD PROFILES

KISCO RIVER



FLOOD PROFILES

KISCO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF MOUNT KISCO,NY

(WESTCHESTER CO.)

04P

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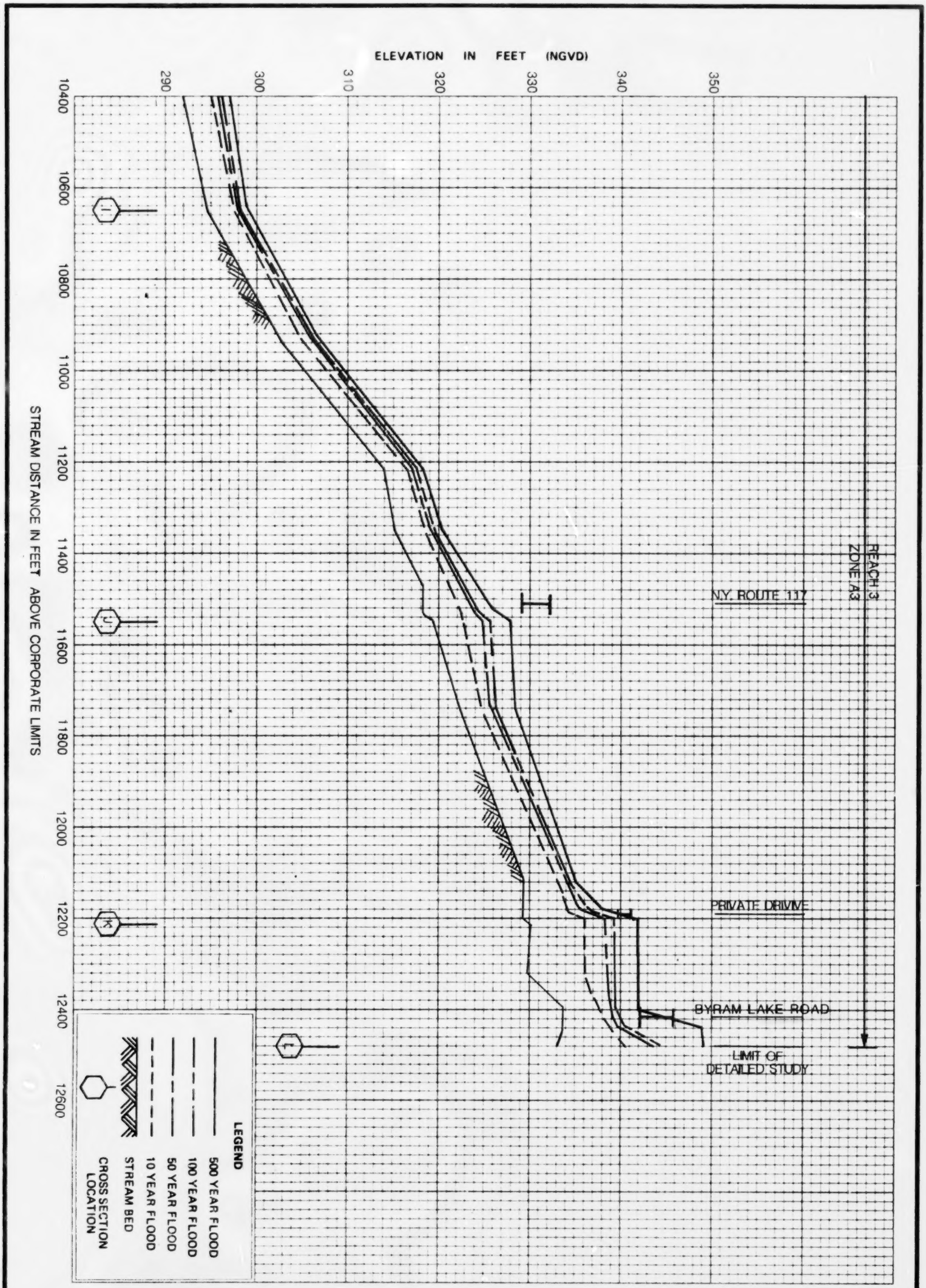


FEDERAL EMERGENCY MANAGEMENT AGENCY

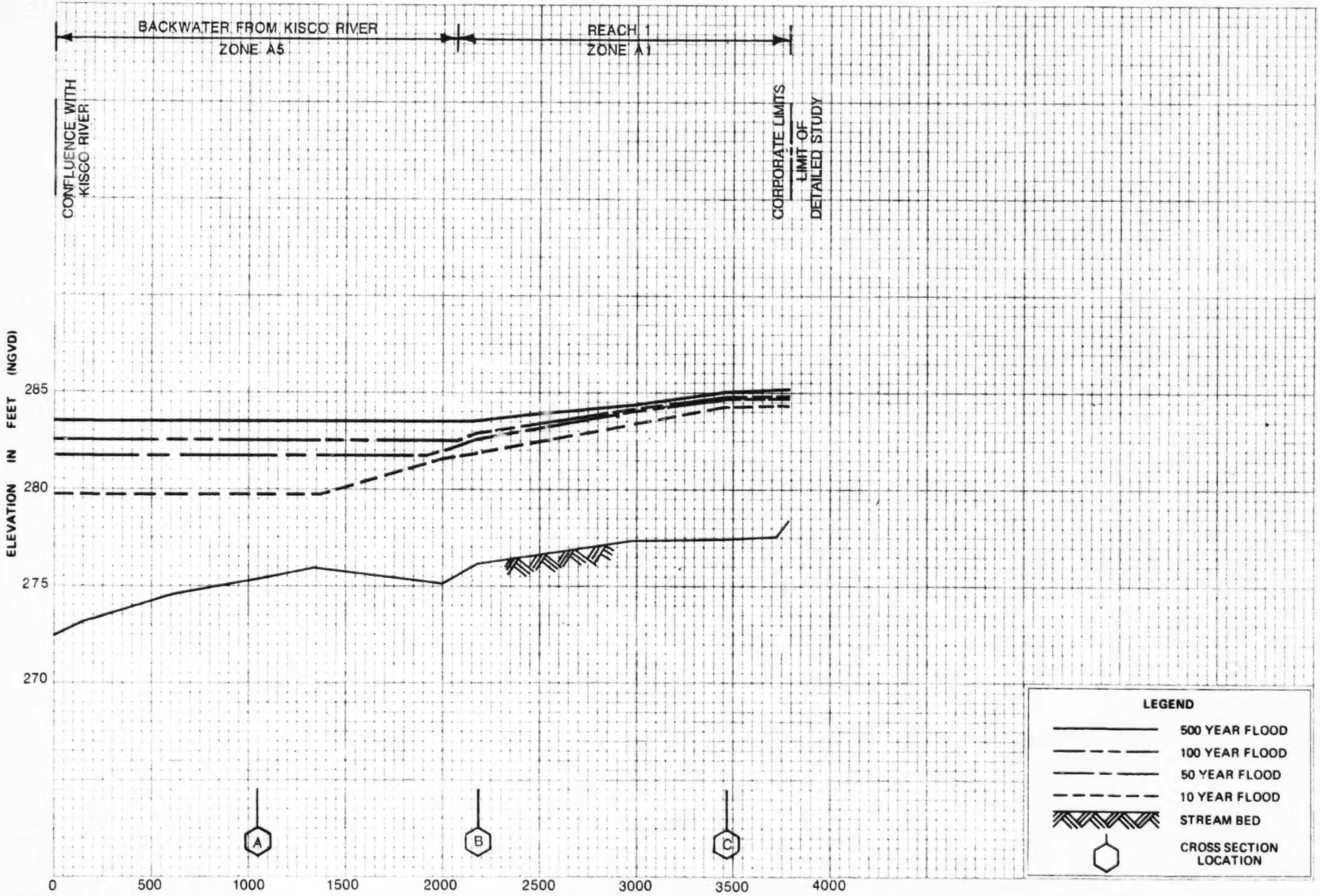
05P

VILLAGE OF MOUNT KISCO,NY

(WESTCHESTER CO.)

FLOOD PROFILES

KISCO RIVER



FLOOD PROFILES

KISCO RIVER TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF MOUNT KISCO, NY

(WESTCHESTER CO.)

06P

N04647

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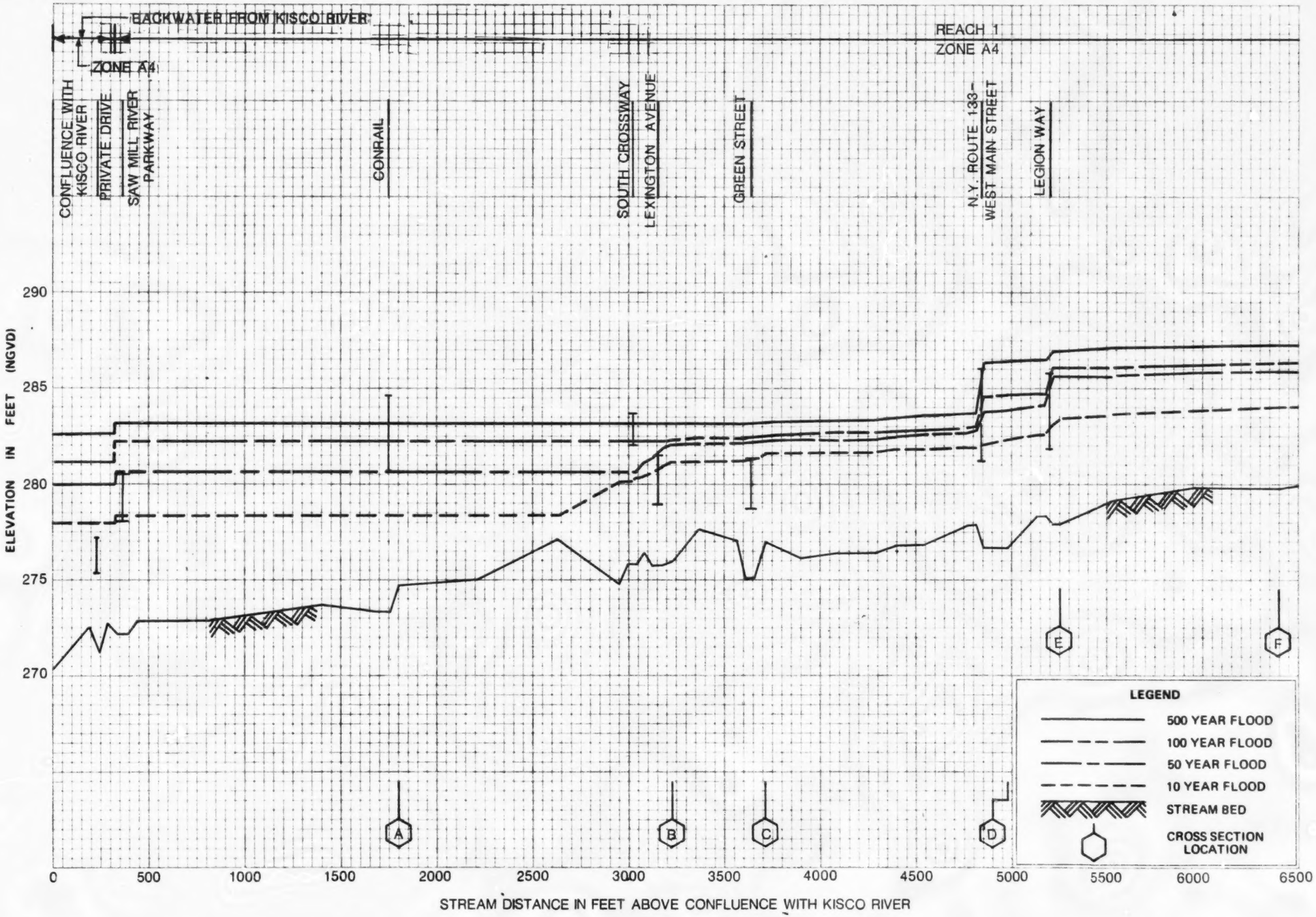

FLOOD PROFILES

BRANCH BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF MOUNT KISCO, NY

(WESTCHESTER CO.)

07P

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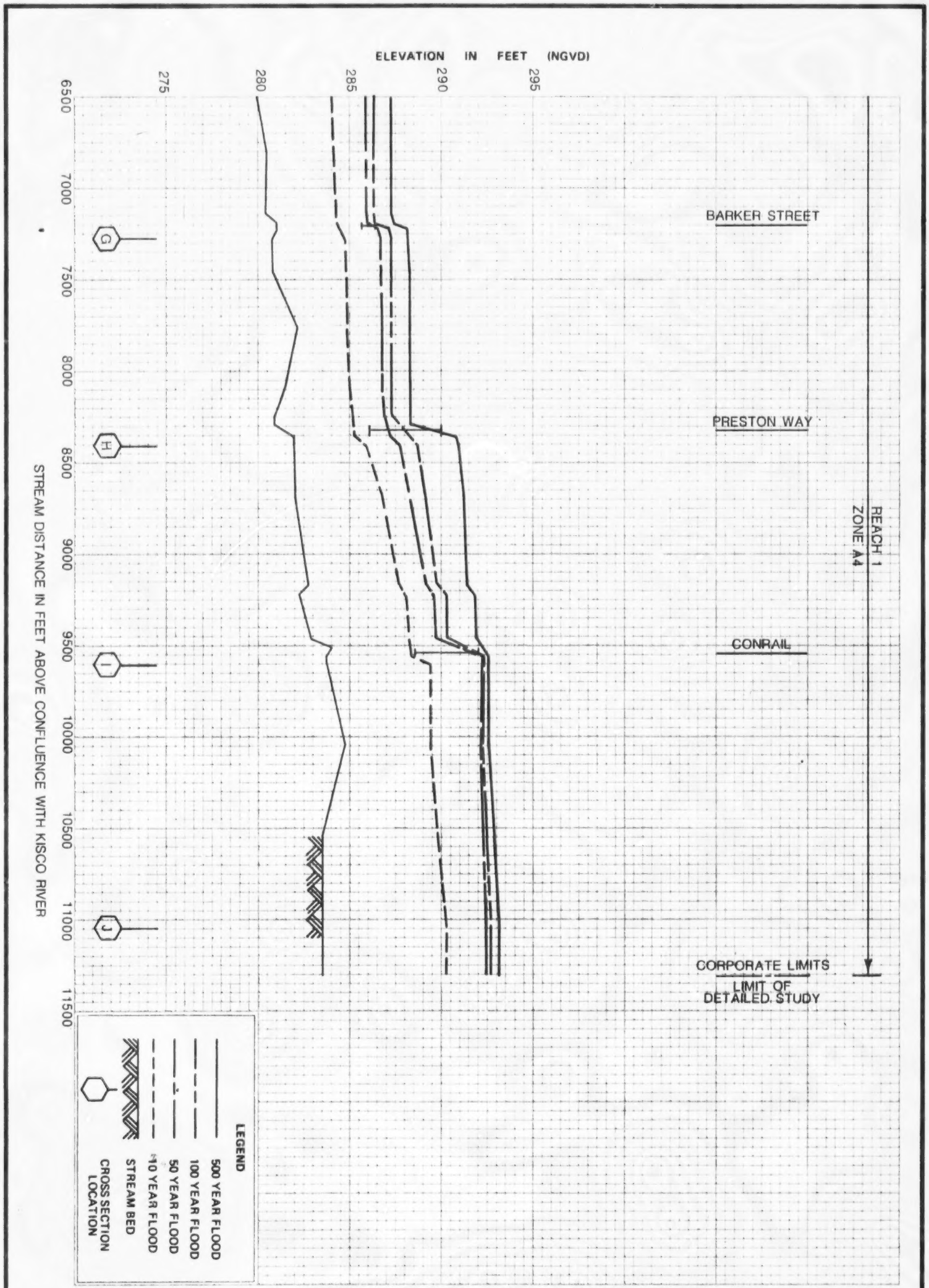

08P

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF MOUNT KISCO, NY

(WESTCHESTER CO.)

FLOOD PROFILES

BRANCH BROOK